DIALOGWEB.

Guided Search   new search   favorites   settings   cost   logoff   help

Dynamic Search: All Databases in Computers, Electronics, and Telecommunications

Records for: *chat? and brows? and (real time) and 199...*   save as alert...   save strategy only...

Output   Format: Full Record   Destination: Browser   display / send

Modify   refine search   back to picklist

select   all none

Records 57 of 163 In full Format

☐ 57. **4/9/57 (Item 57 from file: 275)**
01944316   **Supplier Number: 18361033 (This Is The FULL TEXT)**
Internet access: MCI teams with Microsoft to offer real -time conferencing services via Internet. (markets NetMeeting Internet conferencing software) (Company Business and Marketing)

EDGE, on & about AT&T , v11 , n411 , p4(1)
June 3 , 1996
Language: English   **Record Type:** Fulltext
Word Count: 428   **Line Count:** 00041

Text:

MCI and Microsoft Corporation announced Tuesday that the two companies are working together to deliver standards-based audio and document conferencing services over the Internet through Microsoft's new NetMeeting communications and collaboration software. NetMeeting will make audio and document conferencing via the Internet as easy as a phone call, and workgroup collaboration as effective as being in the same room.

We've entered a new era in telecommunications, with companies setting up Web sites in record numbers," said Philip Knell, president and general manager of networkMCI Conferencing. "Now, with the addition of Microsoft's NetMeeting Internet conferencing software, they will also have instant access to a whole range of shared conferencing applications. Talking, seeing and collaborating on a document in **real -time** will be as convenient as accessing their Web sites."

     With NetMeeting, more than two people can share virtually any existing Windows operating system-based application across the Internet or corporate LAN, enabling business users around the world to review and edit documents without leaving their offices.

     MCI is already working to deliver Web-accessible multipoint conferencing services through its relationship with DataBeam Corporation, which has developed the industry's first standards-based, software-only server product for hosting multipoint conferences on the Internet and corporate intranets.

     In addition, NetMeeting's "whiteboard" and **"chat "** capabilities will enable Web **browsers** to conduct meetings with illustrations, text and comments, and ultimately with the enhancement of value-added video and audio in the same application.

     "The bridge between Internet communications and worldwide conferencing is getting shorter, and creating effective business tools to strengthen that link will open up new avenues of communication in the future," said Brad Chase, general manager in the Internet platform and tools division at Microsoft. "We are delighted to be working with MCI to provide our customers with another technology tool to make **real -time** collaboration

and application sharing easier."
  The new venture between MCI and Microsoft builds upon an existing relationship announced in January **1996** , when MCI and Microsoft announced the companies will market each other's products and services.
  networkMCI Conferencing provides multipoint bridging, a single 800 number for reservations and support and digital transmission. The strategic business unit of MCI Telecommunications Corporation is a leading provider of conferencing services, which currently include audio, video and document conferencing, as well as enhanced fax and integrated voice recognition services. More information on networkMCI Conferencing can be found on the MCI web page, at http://www.mci.com.

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Company Names: MCI Communications Corp.--Contracts; Microsoft Corp.--Contracts
Descriptors: Cooperative Agreement for Product Marketing; Company Services; Company Internet Strategy; Workgroup Software
Product/Industry Names: 7372690 (Communications Software NEC)
SIC Codes: 7372 Prepackaged software
Ticker Symbols: MCIC; MSFT
Trade Names: Microsoft NetMeeting (Workgroup software)--Marketing
File Segment: CD File 275

DIALOGWEB.

Guided Search | **new search** | **favorites** | **settings** | **cost** | **logoff** | **help**

🌐 **Dynamic Search:** All Databases in Computers, Electronics, and Telecommunications

📋 **Records for:** *chat? and brows? and (real time) and 199...*   **save as alert...** **save strategy only...**

Output 🔁 | Format: Full Record ▼ | Destination: Browser ▼ | **display/send**

Modify 🔁 | | **refine search** **back to picklist**

select
all **none** | **Records 48 of 163 In full Format**

☐ 48.   **4/9/48 (Item 48 from file: 275)**
01962904   **Supplier Number: 18526972**
VRML 2.0 tools aim at 3D multi-user interactivity. (products introduced at the Internet World show 1996) (Industry Trend or Event)

Elia, Eric
Newmedia , v6 , n9 , p13(1)
June 24 , 1996
ISSN: 1060-7188
Language: English   **Record Type:** Abstract

Abstract: Several Web **browser** and Web server software packages supporting VRML 2.0, including four products from Oz Interactive, were presented at Internet World, held during the week of Apr 29, **1996** , in San Jose. Oz Interactive's Oz Virtual **Browser** for Windows and Oz Virtual Server together let users choose from avatars and give them realistic facial expressions and motions with the help of a built-in editor. They also offer **real -time chat** capability and 3D sounds, and the **browser** client includes a 3D help angel that responds with text-to-speech answers to questions asked in natural language. Oz also demonstrated products for children, including PLAY3D and Soft2VRML. Integrated Data Systems debuted its Media Server for Windows NT beta. It is intended for the corporate market, and it supports Live-Audio audio **chat** and text **chat** . Other products introduced at the show include Virtus's 3-D Website Builder and Cadkey Inc's SiteSculptor.

Special Features: illustration; other
Company Names: Oz Interactive--Products; Integrated Data Systems Inc.--Products; Virtus Corp.--Products
Descriptors: Trade Show Report; VRML; Web **Browser** ; Internet/Web Server Software; Web Authoring Software
SIC Codes: 7372 Prepackaged software
Trade Names: Oz Virtual **Browser** for Windows (Web **browser**)--Product introduction; Oz Virtual Server (Internet/Web server software)--Product introduction; VRealm 3D Media Server (Internet/Web server software)--Product introduction; 3-D Website Builder (Web authoring software)--Product introduction
File Segment: CD File 275

DIALOGWEB.   ○   ▯▯   ✓ $ ⊘   ?

Guided Search | new search | favorites | settings | cost | logoff | help |

※ Dynamic Search: All Databases in Computers, Electronics, and Telecommunications

▤ Records for: *chat? and brows? and (real time) and 199...* | save as alert... | | save strategy only... |

| Output ☑ | Format: Full Record ▼ Destination: Browser ▼ | display / send |
| Modify ☑ | | refine search | back to picklist |

select
all none   **Records 40 of 163 In full Format**

☐ 40. **4/9/40 (Item 40 from file: 275)**
01992896   Supplier Number: 18712870 (This Is The FULL TEXT)
Browsers at the crossroads. (comparison of Netscape Navigator 3.0 and Microsoft Internet Explorer 3.0) (includes related articles on the next generation of browsers , and the Editors' Choice) (Software Review)(Cover Story)(Evaluation)

Miller, Michael J.; Mace, Thomas; Singh, Amarendra; Clyman, John; Seltzer, Larry; Ozer, Jan

PC Magazine , v15 , n18 , p100(14)
Oct 22 , 1996
Document Type: Cover Story Evaluation
ISSN: 0888-8507
Language: English   **Record Type:** Fulltext; Abstract
Word Count: 9398   **Line Count:** 00765

Abstract: Netscape Navigator 3.0 and Microsoft Internet Explorer 3.0 now dominate the Web **browser** market. Navigator continues to dominate and define the market, but Explorer copies most of its features and adds a few more. Version 3.0 of Navigator offers improved E-mail and news services, and adds collaboration capabilities as well as multimedia functions. Explorer 3.0 matches most of Navigator's capabilities and adds ActiveX technology that aids in bringing Windows applications to the Web. Navigator is generally priced at $49, but Explorer is usually available for free. The choice is difficult, but the **browser** that dominates the market will set the standards for the Web and determine how it is used in the future. The best move may be to use them both, but the Editor's Choice is Netscape Navigator 3.0 because it is the most popular.

Text:

Netscape Navigator 3.0 defines the **browser** . Microsoft Internet Explorer 3.0 clones its features and adds significant new technology. The winner will dictate the future of the Web.

The battle of the **browsers** has quickly come down to a duel. Of the 30 products covered in our last Web **browser** review ("Just **Browsing** ," March 12, **1996**), only two seem to matter anymore. Netscape Navigator remains the overwhelming market leader, the product most people think of as synonymous with Web **browsing** . It defines the Web's de facto standards for HyperText Markup Language (HTML), graphics, plug-ins, Java, and scripting. Almost all Web content that isn't vanilla is flavored for use with Navigator. The latest release, Navigator 3.0, adds collaboration features, multimedia, VRML support, and improved Internet mail and news.

Microsoft Internet Explorer 3.0 is the first version of Microsoft's **browser** that is truly competitive. The new Windows 95 and Windows NT releases not only match up well with Netscape's HTML, plug-ins, Java environment, and scripting standards; they also add support for ActiveX, a technology for bringing Windows-style applications to the Web. Internet Explorer also matches or exceeds Netscape's offerings in collaboration tools, multimedia, VRML, mail, and news. Microsoft is giving its **browser** and development tools away for free (Netscape Navigator sells for $49) and has concluded aggressive bundling deals with several of the largest online services and Internet service providers. Today, Internet Explorer's market share hovers around 10 percent, but it is sure to grow.

Which **browser** should you use? The choice may seem trivial, but it has enormous implications. The company that dominates the **browser** market will dictate online standards and change the way we use the Web.

To help you choose--and understand the implications of your choice--we provide in-depth analyses of both **browsers** from the perspectives of the end user, the Webmaster, and the applications developer. We also look at the performance of each **browser** 's HTML-and graphics-rendering engine, test each **browser** 's collaboration tools, and compare the pair's respective mail and news features. A companion piece in this issue, "Java Speed Trials," gives detailed test results involving both **browsers** ' Java environments.

Given that Internet Explorer comes out ahead in many of these comparisons, you may be surprised that Netscape Navigator is our Editors' Choice. Our decision rests on the fact that Navigator is still the best tool for accessing the huge number of Navigator-enhanced sites on today's Web. Internet Explorer is in many ways a technically superior product, however, and Netscape will have to work hard to keep its lead. Neither **browser** displays the kind of rock-solid stability we expect from other software, a legacy of the frantic pace of Web development. While we will see incremental upgrades to the current versions, both vendors are already working on their next major releases, expected as early as this fall.

It's a Netscape Web

In theory, the Web is based on open standards. In practice, an enormous amount of Web content is tailored to leverage proprietary features in Netscape Navigator **browsers** . These features cover almost every aspect of content delivery.

Netscape extensions to HTML are widely used by page designers who want better formatting control and more display options than what vanilla HTML provides. Plug-ins, another important Netscape standard, give vendors a way to add almost any conceivable functionality to the Navigator **browser** --everything from streaming audio broadcasts to multimedia. JavaScript, Netscape's widely used scripting language, gives Web developers a way to embed small but highly useful programs into their pages. JavaScript can be used to manipulate programmable elements of the Netscape **browser** and the documents it displays.

With the exception of the Netscape HTML extensions, none of these technologies are true standards, and many are undocumented. These proprietary technologies give Netscape enormous leverage, letting it steer the direction of Web development and lock out potential competitors.

Microsoft: Clone maker

No company has understood the power of Netscape's "monopoly" better than Microsoft. (Cynics might observe that Microsoft has long enjoyed comparable control over the Windows platform.) Rather than fighting established standards, Microsoft Internet Explorer 3.0 offers a clone of the Netscape platform. It provides a plug-in runtime environment, supports JavaScript (which Microsoft calls JScript), and exposes the equivalent of Navigator Objects.

Unfortunately, the clone is not 100 percent compatible. A few plug-ins (mostly obscure ones) don't work, some JavaScript pages break, and a handful of objects are unsupported. We expect Microsoft will fix these problems soon. But until then, it's hard to recommend Internet Explorer as your sole **browser** .

Internet Explorer also offers more than its share of original new

technology. Most of this, too, is proprietary, although it's arguably better documented and more accessible to third parties than what Netscape offers. The most significant new technology is ActiveX, a direct descendant of Microsoft's OCX control standard that is ultimately based on Microsoft's Component Object Model (COM). ActiveX is currently a 32-bit Windows-only affair, although Microsoft is porting it to Unix and the Mac. There are already about 1,000 ActiveX controls on the market, and the standard is already widely supported by third-party programming tools.

ActiveX competes with both plug-ins and Java in the sense that it can be downloaded on the fly to add rich functionality to the **browser** . It is also complementary with both in that ActiveX, Java, and plug-ins can be used within Internet Explorer as components to build total solutions. Used in conjunction with JScript or Visual Basic Scripting Editor (VBScript), ActiveX technology makes it possible to develop highly complex Web applications quickly and easily. It is unlikely to be widely adopted on the Web until Internet Explorer achieves a significant market share. But for intranet developers (in 32-bit Windows environments), this represents a very compelling approach.

Both **browsers** support Java applets and provide Java just-in-time (JIT) compilers for accelerating Java execution. This support cements Java's position as a central Web development tool. Overall, Microsoft's Java environment is more stable and far faster than Netscape's.

Web collaboration

Both Internet Explorer and Navigator include tool suites designed to let workgroups collaborate across the Internet. Although these tools are relatively basic, this is a striking trend. Both **browsers** include point-to-point Internet telephones, which let you talk to other users anywhere in the world over an Internet connection (and without long-distance charges). They also offer whiteboard modules for free-form group brainstorming and text-based **chat** modules for **real** **-time** group discussions. Internet Explorer's collaboration suite also includes a powerful remote application-sharing feature that lets co-workers view and coedit documents in any Windows application in **real** **time** across the Internet.

Both **browsers** include mail and Usenet news clients as well. These applications aren't exactly knockouts, but all are functional and will get you started with these core Internet applications.

As competition between Microsoft and Netscape heats up, one certainty is that each vendor sees its **browser** as the key to implementing its vision for the Web. The contest to deliver the fastest, richest, most stable, and most compatible **browser** can only benefit Web users.

Web **Browser** Features That Drive The Web

WEB NAVIGATION has only gotten easier, thanks to both **browsers** ' clean interface design. Internet Explorer comes out ahead on interface customization, while Netscape Navigator offers better options for low-bandwidth users.

HTML standards drive the look of the Web. Internet Explorer's adoption of the powerful Cascading Style Sheets Level 1 standard will give Webmasters typographic control they've never had before, but Netscape Navigator is the faster of the two at actually rendering pages.

VIRTUAL REALITY, in the form of VRML, is available through both **browsers** . Both also support in-line audio. Internet Explorer goes one step further with ActiveMovie, a native video playback module that handles multiple formats.

JAVA AND PLUG-INS remain the accepted standards for extending **browser** functionality. Both **browsers** support them, although Internet Explorer's plug-in support is less than perfect. Microsoft's ActiveX technology is a powerful alternative.

COLLABORATION TOOLS, including an Internet telephone, remote whiteboard, and **chat** , are standard features of both **browsers** . Internet Explorer also offers application sharing, a powerful feature for linking remote coworkers.

Related article: Editors' Choice - *Netscape Navigator 3.0
Explorer 3.0 to access the Web. Together, these tools will give you

far more of the Internet than either one can alone. But if you're limited
to a single **browser** , Netscape Navigator 3.0, the world's most popular and
influential **browser** application, is still the best choice. Too many Web
sites are optimized for Navigator plug-ins and JavaScript features that
Internet Explorer, Navigator's only real competitor, does not yet fully
support.

Navigator 3.0's platform-independent philosophy has taken it to
important host environments including Macintosh and Unix--places where
Internet Explorer 3.0 has yet to go. Navigator's newly introduced
LiveConnect standard, which integrates Java, JavaScript, and plug-ins, will
be particularly attractive to Web developers who want to reach the largest
possible audience on all platforms. Its topflight HTML-rendering
performance and flexible options for low-bandwidth use deliver your pages
more quickly at all connection speeds.

Navigator still has a hard fight ahead to stay number one. Needed
improvements we hope to see in the near future include support for rich
style sheets, better stability and speed in its Java environment, and a
substantially beefed-up collaboration suite.

Internet Explorer 3.0 will wake up anyone who still doubts Microsoft's
commitment to the Web. In just over a year, the company has transformed
Internet Explorer from a flimsy me-too affair into a solidly engineered
platform for cutting-edge Web content and applications.

End users will enjoy Internet Explorer's highly customizable user
interface, easy navigation features, and powerful collaboration tools.
Webmasters will appreciate its strong HTML implementation and welcome its
pioneering adoption of HTML Cascading Style Sheets, a powerful feature
based on a proposed W3C standard that brings basic typographic control to
page design for the first time.

Developers in 32-bit Windows environments will welcome the ease and
power of ActiveX, an OLE-based standard already widely supported by
third-party control and tool vendors. Microsoft's integration of Java,
JavaScript, and plug-ins into the ActiveX model is particularly impressive.
Java developers will welcome Internet Explorer's well-tuned Java virtual
machine, the fastest currently available.

The strikes against Internet Explorer are incompatibilities in its
plug-in and JavaScript support and the fact that Windows 3.x, Macintosh,
and Unix users are left out in the cold. When Microsoft remedies these
deficiencies--and it has committed itself to doing so--Internet Explorer
will be a tough **browser** to beat.

The true winner of the **browser** wars is the one who uses both
Netscape Navigator 3.0 and Microsoft Internet

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MUNRO was the project leader.

END-USER FEATURES

Internet Explorer stresses a Windows look and feel, while Netscape
Navigator is remarkably similar across all the platforms it runs on. Both
browsers ' interfaces stand up well to intense scrutiny.

Thanks to NCSA Mosaic, the Web **browser** pioneer, today's **browsers**
have ingeniously simple interfaces and look more alike than different--at
least on the surface. Once you look into the details, you'll find many
differences that affect their power, configurability, and ease of use.

Netscape Navigator 3.0's interface will look familiar to old Navigator
hands, as the basic paradigm has remained unchanged since Version 2.0. You
can still set Navigator's main toolbar buttons to display themselves as
icons, text, or icons with text, and a second row of buttons gives you
fast access to several useful Netscape-sponsored Web sites. You can't
customize the URLs associated with these buttons. You can choose to show or
hide either of these two rows or the URL location window.

Internet Explorer 3.0 offers a significant number of highly visible
enhancements over its previous release. The biggest is in Internet

Explorer's three-tiered toolbar, which you can collapse into two rows or a single row by dragging. This lets you substantially increase your screen real estate while keeping easy access to the toolbar items you might want. The Links tier shows a set of useful links; you can customize their URLs. On the whole, the toolbars in Internet Explorer are more flexible than those in Navigator.

Navigator's bookmarks are a step ahead of the Favorites list in Internet Explorer, and its tools for managing bookmarks are much easier to use. Navigator can also check for updates to all or some of your bookmarked pages since you last visited them. You can import bookmarks into Navigator from any HTML file, and you can insert separators between bookmark entries to help make long lists more readable. Navigator also gives you detailed information on the last time a bookmark was accessed. Both Internet Explorer and Navigator let you track your link history by color-coding links to visited sites.

Web **browsers** are notorious for filling your hard disk with cached pages. Both Internet Explorer and Navigator let you delete your page cache, set the maximum percentage of your hard disk the cache can occupy, and specify how often to check sites to see if cached pages have been updated. Navigator also maintains a memory cache (which you can clear), while Internet Explorer relies on native Windows caching.

Users who have a tough time remembering passwords will be happy with a feature that lets Internet Explorer store user names and passwords for sites that require it. And those who prefer the keyboard over the mouse can use the Tab key to jump from link to link on a page. For its part, Netscape has added backward/forward navigation to the **browser** pane's right-click menu, letting you jump from page to page without having to move the mouse cursor to the main toolbar.

Users on slow connections will appreciate the fact that Navigator lets you disable autoloading of images yet still lets you download images for any pages you want to see in detail. Internet Explorer lets you disable image loading, but you can't override the setting on a page-by-page basis. Internet Explorer provides ToolTips (derived from the alternative text tag) that are displayed when your mouse cursor hovers over an image. ToolTips for the Back and Forward buttons specify the pages you will move to.

For those concerned with shielding children or other users from some categories of Web content, Internet Explorer supports the Recreational Software Advisory Council rating scheme for Web sites. This lets site designers rate their own content on a five-degree scale in such categories as profanity, sexual content, and violence. You need to supply a password to access areas that exceed the specified levels. Self-imposed ratings may not provide an ideal solution, but you can configure the **browser** to block any site that has not been rated. More generally, Internet Explorer supports the PICS (Platform for Internet Content Specification) standard, which allows for the incorporation of future rating schemes.

With its huge installed base, Navigator has established a number of small conventions as to how Web **browsers** behave, some of which Explorer has mimicked. In both **browsers** , for example, Ctrl-D adds the current page to the bookmarks, and Ctrl-B will open the bookmark folder. In some instances, Microsoft has stayed with Windows conventions, one example being the use of F5 for refreshing a screen.

Multimedia and vrml

Both Internet Explorer and Navigator provide in-line support for a variety of audio and video formats. Navigator's LiveAudio and LiveVideo deliver .AU, AIFF, MIDI, and .WAV audio and .AVI and QuickTime video. Internet Explorer's ActiveMovie control supports all those formats, plus MPEG. It also supports a pseudo-streaming feature that allows audio and video playback to begin before a full file has been downloaded.

Both **browsers** give you the ability to view VRML files within the **browser** window. Microsoft's viewer is licensed from Intervista Corp., and Netscape acquired its Live3D VRML technology last year. Microsoft has announced a licensing agreement with DimensionX to use its Liquid Reality VRML technology in future versions of Internet Explorer.

We found that Internet Explorer delivers good VRML performance but is

very sensitive to any errors in the VRML file. Its VRML interface and navigation controls are intuitive. While Navigator's Live-3D also offers strong performance, it optimizes the rendering of a VRML file by discarding or ignoring some of the file specification and using its own simplified model. Visually, the results are far from pleasing. Live3D is more convenient to install, as it is bundled within the complete version of Navigator, and its low sensitivity to file errors lets it execute VRML worlds that more stringent **browsers** reject.

For secure transactions, such as retrieving your bank balance or paying by credit card, both **browsers** support the same identification and encryption protocols, SSL 2.0 and 3.0 (both 40-bit and 128-bit). Microsoft also supports its own Private Communications Technology (PCT) 1.0 standard. Both Internet Explorer and Navigator let you use personal certificates, which function as digital IDs for Web transactions. Under these schemes, you apply for a certificate from third-party certificate vendors, such as VeriSign, who supply various levels of certified trust. Personal certificates let you provide information about yourself ranging from your e-mail address to your credit card number and beyond.

Internet Explorer provides an Authenticode feature, which lets suppliers of downloadable executable code (plug-ins or ActiveX controls, for example) attach certificates to their products. These certificates assure the end user that the code is from a known vendor and that it has not been altered. Navigator does not provide a comparable feature.

DOWNLOAD AND SETUP

Navigator is available in two downloadable versions, a complete package (5.9MB) that includes Cooltalk (1.95MB) and Live3D (1.38MB) and a reduced version (3.6MB) without Cooltalk. Both include the mail and news clients. Internet Explorer is downloadable in three versions. The full installation (8MB) includes mail and news clients (980K), NetMeeting (2.3MB), ActiveMovie (600K), and the HTML layout control (1.43MB). The "typical" version includes mail and news only, and the minimum version includes only the **browser** . The VRML control is a separate download (1.9MB).

All these downloads are self-extracting and self-installing executable files. Microsoft's installation routine does not allow you to specify a target directory, and if you have a previous version of Internet Explorer, the installer will rename it. The Internet Explorer setup routine will automatically retrieve your Navigator bookmarks and add them to your Favorites list. Both **browsers** depend on Windows for the Internet connection, although both companies offer versions aimed at users who do not have an Internet access provider.

It should come as no surprise that Microsoft has taken great pains to give Internet Explorer a strong Windows look and feel. Its integration into the Windows environment goes beyond anything in Navigator, which looks, feels, and behaves remarkably the same on every platform. For Windows users, Internet Explorer is a smoother ride. But Netscape's cross-platform focus is at the core of the company's approach to the Web, and that hasn't kept the company from producing a very usable and capable Windows **browser** , too.

Related article: Due This Fall: The Next **Browser** Generation
-Amarendra Singh

Even as they ship final versions of Navigator 3.0 and Explorer 3.0, Netscape and Microsoft are hard at work on their next **browser** releases. Both may be available in beta as early as this fall. Microsoft provided us with a fair amount of detail concerning its upcoming Internet Explorer 4.0 and let us work with an alpha version. Netscape revealed less about Galileo, its next-generation **browser** , but gave us some indications of its design goals.

Galileo

Netscape's plans for Galileo concentrate on the Web client as a vehicle for communication and collaboration. The company foresees a melding of group scheduling, discussion, and calendaring features from its Collabra Share product line into Netscape's client and server products.

Much of this enhanced functionality will hinge on added support for

IMAP4 (the emerging Internet Mail Protocol); LDAP (Lightweight Directory Access Protocol), the Netscape-supported open directory structure; and S/MIME (Secure MIME), which will extend encryption and authentication to e-mail. Netscape also plans to bring full WYSIWYG HTML editing capability to both its mail and news clients--no surprise, given the HTML viewing support already implemented in the Navigator 3.0 versions. Netscape also plans to integrate **real -time chat** and audio collaboration directly into the **browser** . The aim is to produce a client that brings Notes-like functionality to corporate intranets and public servers on the Web.

On the HTML front, Netscape has said that it will support stylesheets but has not indicated which implementation it will adopt. With Microsoft putting considerable effort behind one particular set of CSS Level 1.0 and 2.0 draft specifications, any contrary move by Netscape will cause confusion. We can also expect to see additional HTML tags aimed at both page layout and object embedding. To counter the functionality provided by Microsoft's ActiveX controls and VBScript, Netscape will deliver additional Java classes and JavaScript enhancements.

Explorer 4.0

Rather than greatly expand the functionality of the **browser** itself, Microsoft's Internet Explorer 4.0 aims to integrate Internet and local content into a single user interface. In essence, Internet Explorer 4.0 is a fusion of Windows Explorer and Internet Explorer that will give you a unified HTML-based view of the Web, your local system, and your network. Every view you now have of individual folders or the desktop will be augmented by an additional Web view. This will be true of all Explorer views, including the Control Panel and the Windows 95 Desktop.

Much of the new interface functionality will be based on ActiveX. The Web view pane itself is an updated List-View control. It can contain other controls that show such objects as folders. The overall visual effect and behavior will be much like those of today's Windows 95 Explorer.

There are differences, however. Forward and Back buttons will let you use Web-style navigation, whether you're looking at a Web site or your hard disk. A right-hand panel of the Web view can contain an HTML frame with text based on standard templates describing the contents of a particular directory. This is a potentially useful feature for network files, where the directory structure or contents may need some explaining. Since the Windows desktop itself has become an ActiveX container (called the Active Desktop), you will be able to place interesting functional elements on it, such as an Internet news ticker.

Web sites will be able to post a contents file that will let Internet Explorer display the site hierarchy as though it were a local directory structure. Other slated features include off-line **browsing** capabilities and Favorites icons, which indicate when the marked page has changed.

Internet Explorer 4.0's Web view of the Control Panel. The frame on the right shows an associated HTML help text.

In Internet Explorer 4.0, Web sites will be integrated into the same hierarchy tree as local and network files.

In Internet Explorer, you can hide or expose the command buttons, URL location window, and Links display through drag-and-drop.

Netscape Navigator's classic interface has not changed much since early versions. Its bookmark feature is still the most flexible and easy to use.

WEBMASTER FEATURES

Both **browsers** are fine for conventional sites. But new HTML style-sheet standards are changing the face of page design--and only Internet Explorer currently supports them.

-John Clyman

A familiar advisory at many of the more inventive sites on the Web announces: "This site best viewed with Netscape Navigator." And with Netscape driving the development of HTML extensions, such as tables and frames, faster than the standards committees could keep up--and faster than competitors could adopt them--users of other **browsers** have been left wondering, "What am I missing out on?"

But the tide has turned. In most areas, Microsoft Internet Explorer

3.0, not Netscape Navigator 3.0, now leads in implementing the most interesting and significant HTML extensions, the capabilities Webmasters will use to build the next generation of cutting-edge sites. While both **browsers** can produce a respectable rendition of nearly any Web page, Internet Explorer provides superior support for tables, which allow organization of data into rows and columns, and frames, which permit pages to be split into multiple independent regions. More significantly, it supports Cascading Style Sheets (CSS) Level 1, a new HTML draft standard that gives Web designers unprecedented control over the typography and presentation of their pages.

Surf in Style

HTML was created to define the structure of a document, not the details of its presentation. The page author could specify rough distinctions, such as "this is a headline" or "this is a hyperlink," but it was the Web **browser** that would decide how actually to render this information on a user's screen. Although HTML has been extended with attributes that allow more control over the appearance of Web pages, even such simple concepts as indentation and line spacing have remained conspicuously absent.

CSS Level 1 addresses those limitations by providing a full set of basic typographical controls. Designers can specify paragraph margins (left, right, top, and bottom), indentation, fonts, line spacing, text highlighting, and more. And while it's possible to select type size in gross increments using plain-vanilla HTML, only CSS (and thus only Internet Explorer) currently allows specification of type size down to the point--or pixel, or pica, or any of a number of other measures. (Navigator 3.0 supports the FACE attribute for the FONT tag, a Microsoft HTML extension that allows control over the typeface that the **browser** uses.)

Beyond the advantage of greater control over presentation, CSS gives Web authors three important benefits:

* Stylesheets allow style information to be kept in a separate file from the HTML document, making sites far easier to maintain. Multiple pages or even an entire site can point to a single stylesheet, and changes to that one stylesheet will propagate across every page.

* You can apply stylesheets in a way that is generally transparent to noncompliant **browsers** ; with care, there's no need to design completely separate pages.

* With stylesheets, you can use HTML to create display elements, such as headlines, that have traditionally required the use of bulky GIFs.

Netscape has pledged to support style- sheets in Navigator 4.0, scheduled for beta release this fall. What's unclear is whether Navigator will support the same CSS standard as Microsoft. In the meantime, Netscape has adopted several proprietary tags that permit some additional control over presentation. Netscape's MULTICOL tag flows text automatically into multiple columns, with adjustable column width and inter-column spacing. (Traditionally, HTML authors have simulated columns by using tables, an awkward solution.) Additionally, Netscape's SPACER tag permits the insertion of either horizontal or vertical white space of a specified number of pixels.

FrameS and tables

Frames, which let multiple panes of information occupy a single **browser** screen, have become a commonplace fixture on the Web. Both Navigator and Internet Explorer support basic and borderless frames, which have no visible divider between panes and thus allow a more seamless presentation. Both **browsers** also support a variety of controls over frame attributes, such as whether a frame has scroll bars or is resizable. And both allow nested frames.

Despite this commonality, there are subtle differences. Navigator recognizes attributes that define a border's thickness and color. Microsoft supports the novel and far more sophisticated concept of floating frames, which differ from traditional frames in their ability to appear anywhere on a Web page. Floating frames are a powerful concept that we expect to see more.

Both Navigator and Internet Explorer support tables, and both support

grouping of multiple rows and columns, table borders, nested tables, and cell background colors. Yet here, too, Microsoft has taken an incremental lead. Although the World Wide Web Consortium (W3C), which holds formal responsibility for HTML specifications, has not yet ratified a standard for tables, Internet Explorer is closer to supporting RFC (Request For Comments) 1942, the proposal likely to be adopted. Internet Explorer can place background images in table cells and draw different types of borders between cells. As this latter capability is improved, it will become particularly valuable for presentation of complex tabular data, such as balance sheets.

Lights, Sound, Action

In the areas of graphics and multimedia, Navigator and Internet Explorer support slightly divergent capabilities. Neither is markedly superior, but each has unique strengths and weaknesses. The **browsers** share the ability to handle basic graphics types, including JPEGs, GIFs, transparent GIFs, and GIF89a animations. Both can handle client-side image maps. Internet Explorer also supports .BMP files, a format seldom found on the Web.

The real differences between them are more esoteric. Navigator, for example, supports the LOWSRC attribute to the IMG tag, which lets designers specify a lower-resolution preview version of a graphic that loads before the full image. That can be particularly useful over slow connections. Internet Explorer, on the other hand, supports a simple DYNSRC attribute that provides nearly the opposite function: It loads an Audio-Video Interleaved (AVI) animation, rather than simply displaying a static graphic. Internet Explorer also provides native support for MPEG-1 video playback, while Navigator does not.

Both Navigator and Internet Explorer support background graphics, but only the latter supports watermarks, or nonscrolling backgrounds--a very minor plus. Both **browsers** support background sounds as well, each using its own syntax.

Basic HTML and Forms

Both Navigator and Internet Explorer feature strong compliance with HTML 2.0 standards, and perhaps not surprisingly, each **browser** also supports a handful of minor proprietary extensions. Internet Explorer can produce horizontal rules in different colors. It also provides a built-in marquee control that can generate ticker tape-style scrolling text, as many Java applets do.

Netscape supports the BLINK tag, which simply causes text to flash--annoyingly, some feel--and the ALINK attribute to the BODY tag, which changes the color of links as they are clicked.

Navigator offers a few relatively insignificant options that Internet Explorer lacks for presenting lists: It permits specification of the type of bullets to be used in bulleted lists, for instance, and it supports a DI COMPACT tag that produces very compact directory listings.

Both **browsers** support META tags to enable capabilities such as client pull, which causes a page to refresh automatically after a given time has elapsed. Internet Explorer recognizes one key META tag that is currently ignored by Navigator: the tag that shows a Web page's rating from a PICS (Platform for Internet Content Specification) system such as RSACi, the Recreational Software Advisory Council's standard for rating violence, language, and sexual content.

Feature for feature, Internet Explorer 3.0 has managed to match or exceed Navigator's HTML support in almost every significant area. While Netscape promises support for key enhancements, such as stylesheets, in future releases, Microsoft has succeeded in producing a more capable product for use today.

DEVELOPER PLATFORMS

Although Microsoft's and Netscape's solutions for developing Web-based applications have many features in common, the companies are moving in fundamentally different directions.

-Thomas Mace

Web **browsers** have quickly evolved from simple HTML engines into full-fledged application platforms. The underpinnings of these platforms--

browser extension APIs, scripting languages, **browser** objects, and Java--let developers add rich custom functionality to what are otherwise lightweight, generic environments. In every area, from Web-based multimedia to intranet client/server applications development, the effect of the **browser** platform has been profound.

More than any other vendor, Netscape has pioneered the concept of the **browser** as an application host. The Netscape Navigator 3.0 platform consists of five basic elements: Navigator plug-ins, Java, JavaScript, Navigator **browser** objects, and LiveConnect, a set of **browser** services that can tie the other elements together.

Given Netscape's overwhelming market dominance, Microsoft had little choice but to clone the Navigator platform. Microsoft Internet Explorer 3.0 does this with reasonable success and in some areas significantly improves on Netscape's implementation. Internet Explorer also introduces ActiveX, an important new standard based on Microsoft's Component Object Model (COM) that offers significant benefits to developers in 32-bit Windows environments.

Plug-ins and Java

The best-known Navigator extension standard is the Plug-in API, and some of the Web's most interesting rich-media types are delivered via plug-ins. The tools for building plug-ins, provided in the Netscape LiveConnect/Plug-in SDK 3.0, are aimed at C developers and provide for relatively straightforward ports of existing code. Plug-ins are platform-specific; developers need to create separate versions for each operating environment they wish to support. They are also inherently insecure, as they have full access to system services, including memory and file I/O.

Internet Explorer 3.0 supports most major plug-ins, including such staples as Envoy, ichat, RealAudio, and Shockwave. Some less common plug-ins, however, do not work reliably. Microsoft blames its spotty support on Netscape's failure to publish a plug-in container specification (the Plug-In API itself is public).

While plug-ins have proved highly successful with developers, Netscape is moving toward Sun Microsystems' Java programming language as its core **browser** -enhancement technology. Navigator 2.0 was the first major commercial **browser** to provide a Java virtual machine (VM), and Navigator 3.0 introduces a powerful Java enhancement, a just-in-time (JIT) compiler that compiles Java programs into faster native machine code on the fly.

Unlike plug-ins, Java applets are platform-independent. Java also offers a tight "sandbox" security model, letting the **browser** trap and disallow all memory- and file-access calls. Java has enormous potential for corporate developers who must deploy applications across multiple hardware and operating-system platforms. Navigator 3.0, available for 32-bit and 16-bit Windows, Macintosh, and 11 Unix operating systems, is supremely well positioned as a cross-platform Java host.

Sadly, our tests of the Navigator Java VM (in the 32-bit Windows implementation) showed it to be buggy and on the slow side. In contrast, Internet Explorer's implementation of the Java VM and JIT is stable and fast. Interestingly, we found that neither **browser** is capable of supporting highly complex Java applications that employ with large data structures. (For a detailed look at all our Java test results, see "Java Speed Trials" in this issue.)

Scripting and **browser** objects

Netscape Navigator 3.0 provides a simple programming language and runtime environment called JavaScript, which despite its name bears almost no resemblance to Java. JavaScript code is transmitted to the **browser** in text form as part of the HTML page. You can use it to generate new HTML page elements on the fly, respond to user actions such as button clicks and check-box selections, or perform simple client-side processing and data validation. JavaScript does not have file- or memory-access capabilities, so it is highly secure.

Internet Explorer provides two scripting languages. The first, JScript, is a very close clone of Netscape's JavaScript. The second, Visual Basic Scripting Edition (VBScript), is Internet Explorer's native scripting

language. VBScript, derived from Basic, has a decidedly different flavor from JavaScript but offers comparable features, ease of use, and security.

One of the most powerful features of **browser** scripting languages is their use of **browser** objects, units of ready-made functionality that the **browser** exposes to the programmer. Navigator provides a comprehensive set of **browser** objects, many of which encapsulate the elements of HTML pages and forms. Text fields, buttons, radio buttons, and check boxes are among the most useful. Others, such as the history list, encapsulate elements of Navigator itself. With a few annoying exceptions, Internet Explorer implements the Navigator **browser** objects and methods, and you work with them using either JScript or VBScript.

Internet Explorer also exposes a different and very important set of objects called ActiveX controls. These are a simplified superset of the familiar OLE controls used by Visual Basic and many third-party development tools. Although ActiveX is not a formal standard, both the control and container specifications are publicly available. Internet Explorer exposes the usual buttons and list boxes as well as image, hot-spot, marquee, multimedia, and other controls, which can be put on your HTML page and manipulated using JScript or VBScript. Internet Explorer itself is programmable through its ActiveX interfaces, so developers can build fully customized **browser** containers.

More importantly, the ActiveX environment lets you add third-party ActiveX controls to your pages. More than 1,000 controls are now on the market. You'll find everything from fully functional spreadsheets to 3-D world viewers, and these controls largely surpass anything currently available for Java. Generally, these controls are far easier to integrate into applications than plug-ins or Java applets. ActiveX controls not originally built for Web use may be quite large, however.

LiveConnect and Active Content

The biggest change that Navigator 3.0 brings to the Netscape **browser** platform is LiveConnect, a set of **browser** services for combining JavaScript, Java, plug-ins, and HTML objects into compound applications via a common object model, the Java Runtime Interface. LiveConnect programming is not trivial. Programmers must know the calling conventions of each object used, which probably means having access to the source code. But LiveConnect is significant in allowing integration of robust elements written in C with the Java/JavaScript environment.

Internet Explorer provides a comparable environment, based on ActiveX, that unifies ActiveX controls, Java, plug-ins, HTML objects, and the two scripting languages. Under Internet Explorer, all Java applets are automatically wrapped in an ActiveX automation interface, making them full members of the ActiveX environment. In many ways, Microsoft's solution is more tightly integrated and easier to work with than Netscape's. Its drawback is that, like all ActiveX technology, it is limited to 32-bit Windows.

Internets and Intranets

For developing public Web sites designed to reach the largest possible audience, your only real option today is the Netscape platform, with its plug-ins, Java, and JavaScript. Navigator's plug-in support is clearly more reliable than Internet Explorer's, while Internet Explorer offers a superior Java environment.

For corporate intranet applications, the choice is more complex. Neither **browser** has what it takes to support heavy-duty Java applications with large data structures. ActiveX and its related technologies are the most attractive option for 32-bit Windows shops, but companies with 16-bit Windows legacy systems, Unix desktops, and Macintoshes will have to look elsewhere for now.

The only remaining option is to use Navigator plug-ins, possibly with the addition of lightweight Java applets and script. This somewhat retro solution is platform-dependent and lacks a clear upgrade path to Java or ActiveX. Today your choice of platform will involve compromises. We hope to see the next **browser** generation expand the options further.

PERFORMANCE TESTS

Netscape Navigator renders most HTML pages faster than Internet

Explorer over both LAN and modem connections. On some real-world pages, you'll notice the difference.
        -Larry Seltzer
        It's no shutout, but overall, Netscape Navigator 3.0 is faster at rendering HTML pages than Microsoft's Internet Explorer 3.0. Navigator's lead is most noticeable in LAN-based testing: In no case did Internet Explorer load a complete page as quickly as Navigator. As a rule, Navigator was also much faster at reloading pages from its cache. Over a modem connection, each **browser** led in some tests, but usually by an insignificant margin. These differences will be even less noticeable with real Web pages than our tests might indicate, especially at modem speeds. But in some cases, they will make themselves felt.
        Testing **browsers**
        We tested both **browsers** on a private IP network using a standard Web server. We connected to the server both directly over a 16-Mbps Token-Ring network and over a 28.8-Kbps modem through a Windows NT PPP RAS server, also on the network.
        Instead of simply measuring the time for the page to load, we captured three results: the time needed to display the first usable element, the time needed to load the complete page, and the time needed to reload the page from the **browser** 's cache. We cleared the cache and restarted the **browser** between each test.
        Instead of testing with real-world Web pages (which, at network speeds, loaded almost instantaneously in both **browsers**), we created a series of 13 highly stressful synthetic pages.
        The Formatted Text and Links page is a 570K HTML file containing text and a large number of hyperlinks. Internet Explorer took consistently longer than Navigator to load the complete page.
        The Graphics and Formatted Text I test document contains 480K of .GIF images and 37K of HTML. Again, Internet Explorer was slower. Over a modem, Internet Explorer also had more trouble than expected loading the first element quickly (the first element in the page is a large graphic that extends below the bottom of the first screen). The Graphics and Formatted Text II test document is smaller and contains both .GIFs and HTML. The Very Long Text and Graphics test page is more text-heavy and contains fewer graphics than the previous two tests. Navigator was generally faster in both.
        Our HTML Controls page is extremely stressful: It contains 100 buttons, 100 radio buttons, 100 check boxes, 100 password-entry fields, and 100 list boxes, each populated with 100 elements. This test proved disastrous for Internet Explorer, which took more than twice as long as Netscape Navigator to load the full page. Surprisingly, Internet Explorer was unable to display a first element until it had loaded the entire page; Navigator was able to display the first element in just over 1 second.
        Once Internet Explorer had loaded the HTML Controls page, we noticed that free Windows 95 user resources had dropped to 34 percent (Navigator left us with 55 percent free, a significant difference). Internet Explorer's difficulties in loading large numbers of controls are severe enough to affect its performance with real-world pages.
        Graphics tests
        Our remaining eight tests concentrated on graphics. All are based on the same series of 51 images, formatted as both .GIFs and JPEGs. The basic .GIF and JPEG test pages load the images in 17 rows of three images each. In the two table tests, they are loaded as elements in a table with 17 rows and three columns. In the four horizontal and vertical frame tests, they are loaded in three frames containing 17 images each.
        Over a modem, differences between the **browsers** in full-page loads were minimal, although Internet Explorer was consistently faster at rendering the first usable graphic. When the graphics were in a table or in horizontal frames, Navigator was unable to display any graphic until it had loaded almost the entire page.
        Over a network, Navigator proved consistently faster than Internet Explorer at loading full pages. Navigator was not able to display initial elements, however, before rendering the entire page. In the simple .GIF and

JPEG tests, Internet Explorer was able to display a usable graphic very quickly. But on some frame and table tests, Navigator was able to render an entire page before Internet Explorer rendered the first usable element.

WHY WE DON'T TEST ON THE INTERNET

We considered and rejected the possibility of testing across a live Internet connection. As attractive as this approach seems, results from such tests are meaningless. Conditions on the Internet are inherently unreproducible. It is next to impossible to know the conditions of the test, and those conditions are in constant flux.

For example, the first time you load a page from a remote server, the file may be read from the server's disk into a page cache. The page may also be routed through a proxy server, which will cache the contents. Either way, a second page request will be serviced much more quickly than the first. It is also possible that a cache could be flushed between accesses. An even bigger problem is the fact that IP routing on the Internet can vary enormously, not only among longer or shorter routes with larger or smaller numbers of lines, but among faster or slower lines. Two requests for the same page will often travel different routes. Only by testing on a closed IP network are we able to deliver meaningful and repeatable results.

COLLABORATION TOOLS

Internet collaboration is a standard feature of both **browsers** . But application sharing and a state-of-the-art Internet telephone give Internet Explorer the edge.

-Jan Ozer

Internet collaboration gets a big boost from its inclusion in both Microsoft Internet Explorer and Netscape Navigator as a standard **browser** feature. On the surface, Internet Explorer's NetMeeting and Navigator's CoolTalk look quite similar. Both offer point-to-point Internet telephone and a variety of collaboration modules. But scratch a bit deeper and you'll find considerable differences in approach.

NetMeeting is a business-oriented, multiparty collaboration program that offers high-quality audio and efficient Windows application sharing. CoolTalk is a consumer-oriented Internet phone with somewhat sketchy audio quality, supported by some collaboration applications.

NetMeeting is clearly superior for business applications, and many consumers will prefer its higher audio quality even over CoolTalk's attractive voice mail feature. In the longer term, Microsoft's support for the rapidly coalescing International Telecommunications Union (ITU) T.120 conferencing standard promises compatibility with products from more than 20 other vendors. CoolTalk users must pin their interoperability hopes on Netscape's own Internet Interactive Collaboration Environment (IICE).

Audio Conferencing

Internet phones use lossy coder/decoder (codec) software algorithms to compress audio data prior to transmission and to decompress and play it at the receiving end. Audio quality is highly dependent on codec quality. Another key concern is the robustness of the technology during normal conversations across a full-duplex (two-way) connection. If your link is marred by frequent breaks, or audio gaps, conversations take on an uncomfortable CB radio-like feel.

Both CoolTalk and NetMeeting offer multiple compression technologies for varying bandwidths. We tested them over connections ranging from 28.8 Kbps to 10 Mbps. To test robustness, we carried on a scripted two-way conversation over an Ethernet LAN, taping audio output at both ends to spot audio breaks.

In terms of pure quality, NetMeeting was superior at all bandwidths. At 28.8 Kbps and above, it produced audio that matched the quality of a long-distance call. More importantly, NetMeeting proved much more robust than CoolTalk, suffering very few noticeable breaks. CoolTalk conversations were marred by frequent audio breaks that forced us to speak slowly and carefully to make ourselves understood.

CoolTalk is one of the few Internet phones to offer answering-machine capabilities. While the feature worked as advertised, it's of limited value to those with dial-up Internet connections, since the connection must be active for callers to leave a message. Those with LAN-based connections to

the Internet may find it useful.

Both products offer online directory listings of fellow users along with easy one-button dialing. NetMeeting is also compatible with several third-party Internet white-page services, including Bigfoot Partners, Four11, InfoSpace, Coordinate.com, and WhoWhere. Microsoft's own listing servers are easier to access and more useful than Netscape's, having fields for e-mail address, first and last name, city/state, country, and comments, along with the ability to sort on any field. CoolTalk directory entries are limited to name and e-mail address, and the server was frequently too busy to access during our testing.

Collaboration Tools

Internet collaboration is a fairly new concept. The gamut of collaboration modules includes whiteboard products, text-based **chat** windows, and file-transfer utilities. Most impressive are application-sharing programs, which let several users share an application across an Internet link to work collectively on a document.

The first consideration in collaboration is scope: How many people can work together at one time? Where both products are limited to two-party audio communications, NetMeeting's other collaborative functions can be accessed by multiple participants. CoolTalk's modules are strictly two-party throughout.

Next to consider are the collaborative functions provided. Both products provide whiteboard and **chat** , but only NetMeeting offers application sharing and file transfer. Using NetMeeting, we were able to group-edit a memo written in Word, review an expense report in Excel, and contribute to a presentation developed in PowerPoint. The feature worked flawlessly at 28.8-Kbps bandwidths, opening application sharing to traveling co-workers.

Whiteboard utilities emulate the function of the ubiquitous conference-room whiteboard. NetMeeting's and CoolTalk's whiteboards resemble simple image-editing programs, and both perform the same basic function, transmitting drawings, images, and annotations to other conferees in **real   time** .

CoolTalk limits you to a single 640-by-480 surface, while NetMeeting supports multiple pages of much larger resolution. All annotations made in the CoolTalk canvas are final: You can erase, but you can't edit. In contrast, NetMeeting maintains all images and markings separately, so you can move them around without erasing. Differences between the products' **chat** utilities were much less significant, although NetMeeting has a slight edge. Overall, NetMeeting sets high standards for Internet collaboration, which CoolTalk must work hard to meet.

MAIL AND NEWS

Internet mail and Usenet news clients aren't the highlights of either **browser** . But they're well integrated, functional, and likely to get better. Here's what they offer.

-Amarendra Singh

In recognition of the importance of the Internet's two most widely used applications, Netscape Navigator 2.0 was the first **browser** to integrate Internet mail (POP3/SMTP) and Usenet news (NNTP) clients. Now, better late than never, Internet Explorer 3.0 brings mail and news capabilities to Microsoft's **browser** .

Neither company's offerings will take the place of full-featured Internet mail and news applications. But both companies include mail and news capabilities free with their **browsers** , and both deliver basic functionality with the occasional nice twist.

The mail and news clients included in Navigator 3.0, although not significantly enhanced beyond the previous version, exhibit an intriguing HTML-centric conception that is not yet strongly implemented. Microsoft's clients push the envelope less but are somewhat more polished in their current state.

Both sets of mail and news clients are designed to look and feel very much like the companies' respective **browsers** . Both use a three-pane interface to display different message elements. Navigator's clients do not allow you to remove any of these elements; Internet Explorer's clients let

you hide all but the message headers. To view postings, you highlight a message header; the message's contents are displayed in the message pane.

The two **browsers** ' mail and news clients have many family resemblances and common features. Within Internet Explorer, messages containing an attachment appear with a paper-clip icon on the upper right-hand corner of the message window. Unfortunately, you have only the option of executing the file through the appropriate application. That's not very useful for saving executable files. If a file is split into multiple parts, however, you can select all the messages that comprise the file, decode them, and then save the resulting file. Netscape offers you the options of viewing attachments in-line or as an icon in the message pane.

Both **browsers** ' news clients let you specify the number of message subject headers you want to download. The Internet Explorer client makes it easy to load additional messages by choosing a menu option; in Navigator, you need to close and then reload the group. The Navigator client provides greater control over the amount of detail shown in NNTP message headers, such as where a message was cross-posted and from what news server it originated. Most of the reply options, such as replying to all and including the original message in the reply, are standard. Neither mail client supports mailing lists or blind copies. Internet Explorer has limited sorting capabilities in its mail facility.

Navigator's news reader dedicates a certain amount of screen real estate to listing all newsgroups. The Internet Explorer news reader, called Microsoft Internet News, displays the list in a separate window, thus saving space. The downside of this approach is that you have to launch a separate dialog to view unsubscribed groups. The dialog provides a tabbed dialog box to differentiate among the full list of newsgroups, the lists to which you have subscribed, and the new groups on your server. Internet Explorer's news reader offers superior off-line **browsing** . You can mark headers for later retrieval or create batch posts for specific groups.

Rich mail

Both Microsoft and Netscape say their mail clients support HTML, a somewhat vague and confusing claim. Navigator's mail client can view HTML attachments in-line with the actual message, but it cannot directly create HTML mail. Both packages can turn an embedded URL into an active link. Internet Explorer's client supports rich text, which it can convert to a basic HTML equivalent, but you can't insert images or use advanced HTML features.

Ultimately, the mail and news offerings from both companies fall short of the mark, while holding out the promise of something better. We'd like to see full HTML creation added to the Navigator clients' HTML-viewing capability. And we'd like to see Internet Explorer's weak HTML creation and rendering facilities beefed up to cover the full range of formatting possibilities.

Special Features: illustration; table; graph
Company Names: Microsoft Corp.--Products; Netscape Communications Corp.--Products
Descriptors: Web **Browser** ; Software Multiproduct Review
SIC Codes: 7372 Prepackaged software
Ticker Symbols: MSFT; NSCP
Trade Names: Netscape Navigator 3.0 (Web **browser**)--Evaluation; Microsoft Internet Explorer 3.0 (Web **browser**)--Evaluation
File Segment: CD File 275